

Reclaiming American Educational Leadership: Learning Technology

iFest 2011

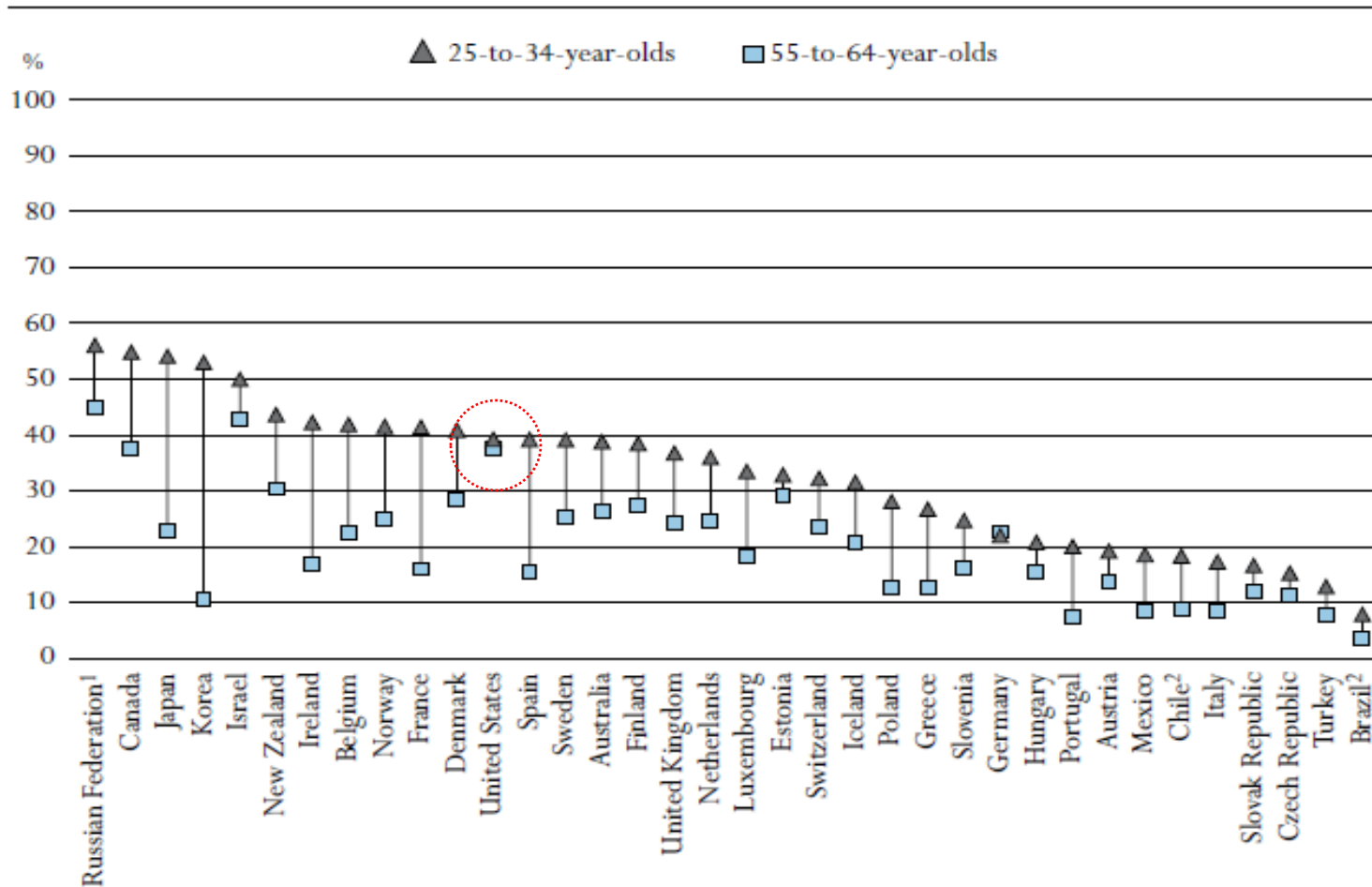
August 3, 2011

The Challenge

The Myth: “America is Falling Behind in Education”

Chart A1.3. Population that has attained at least tertiary education (2006)

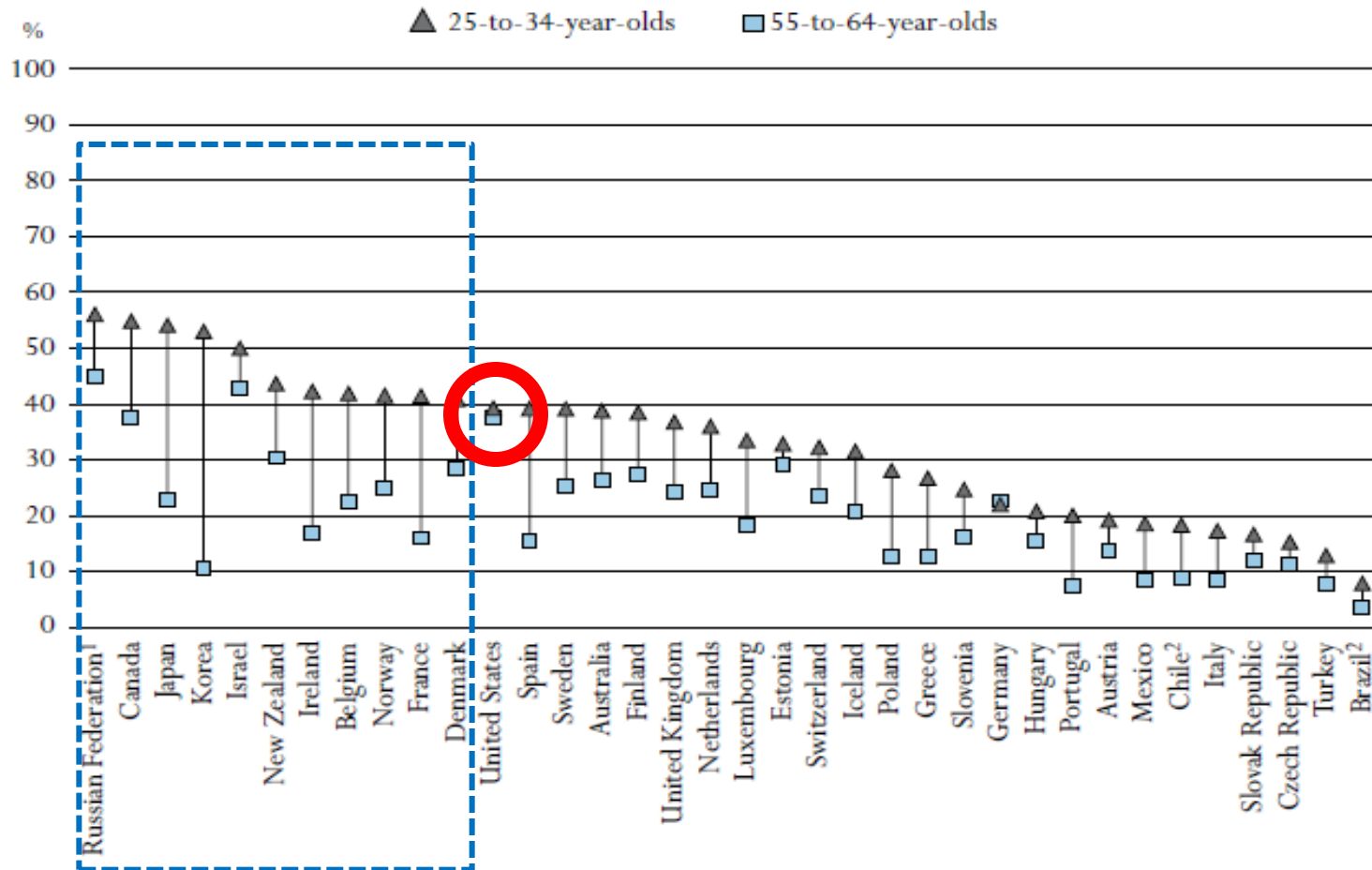
Percentage, by age group



The Truth: Other Nations Are Passing Us By

Chart A1.3. Population that has attained at least tertiary education (2006)

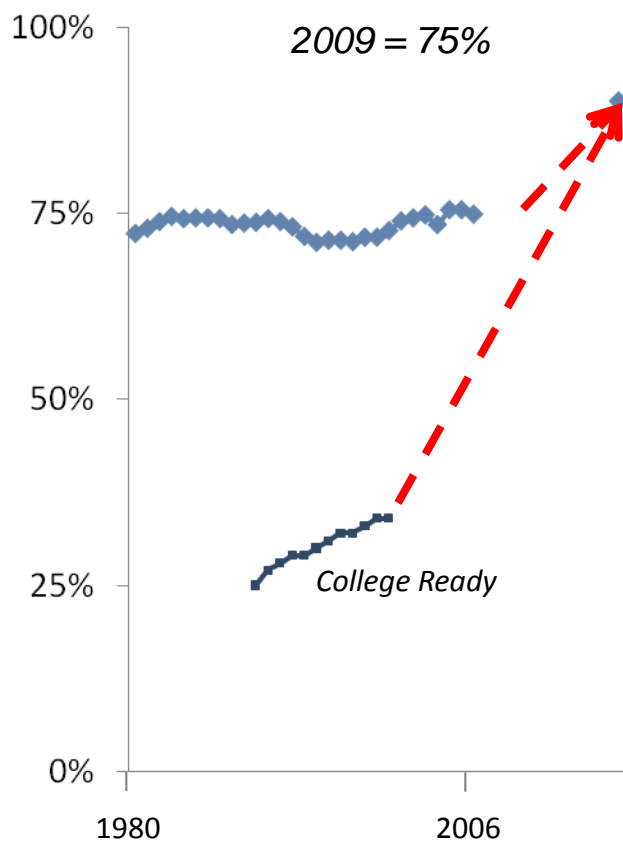
Percentage, by age group



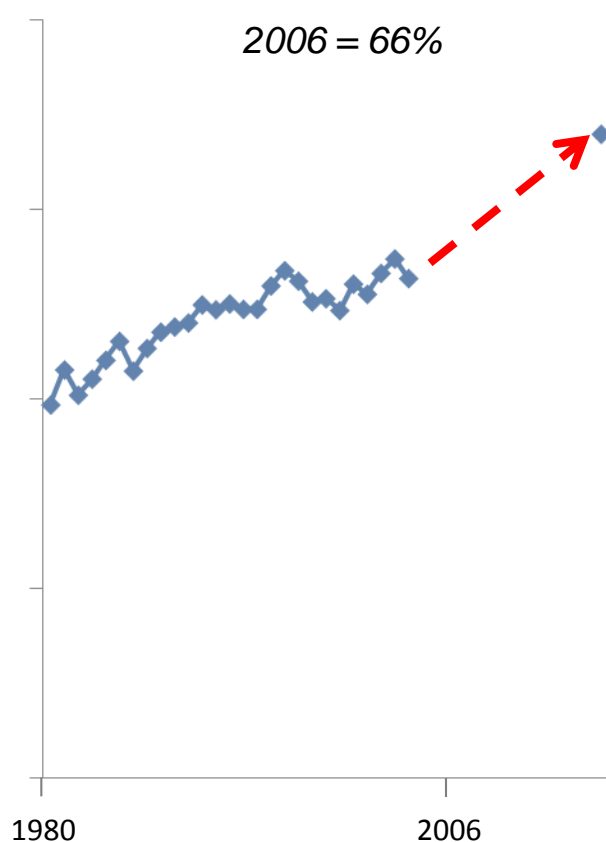
Reclaiming American Educational Leadership

... And We Need Dramatic Improvement at All Levels of the System In Order to Lead the World Again by 2020

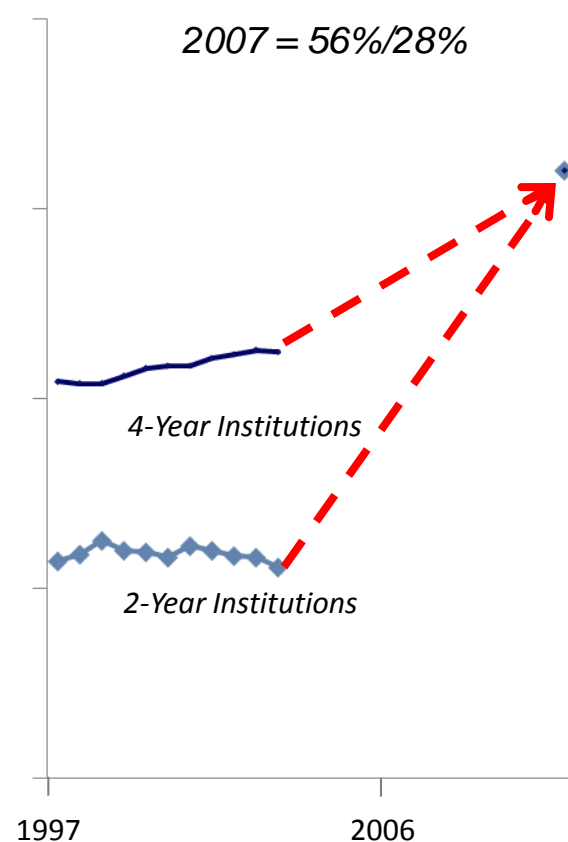
HS Graduation Rate



PSE Enrollment Rate

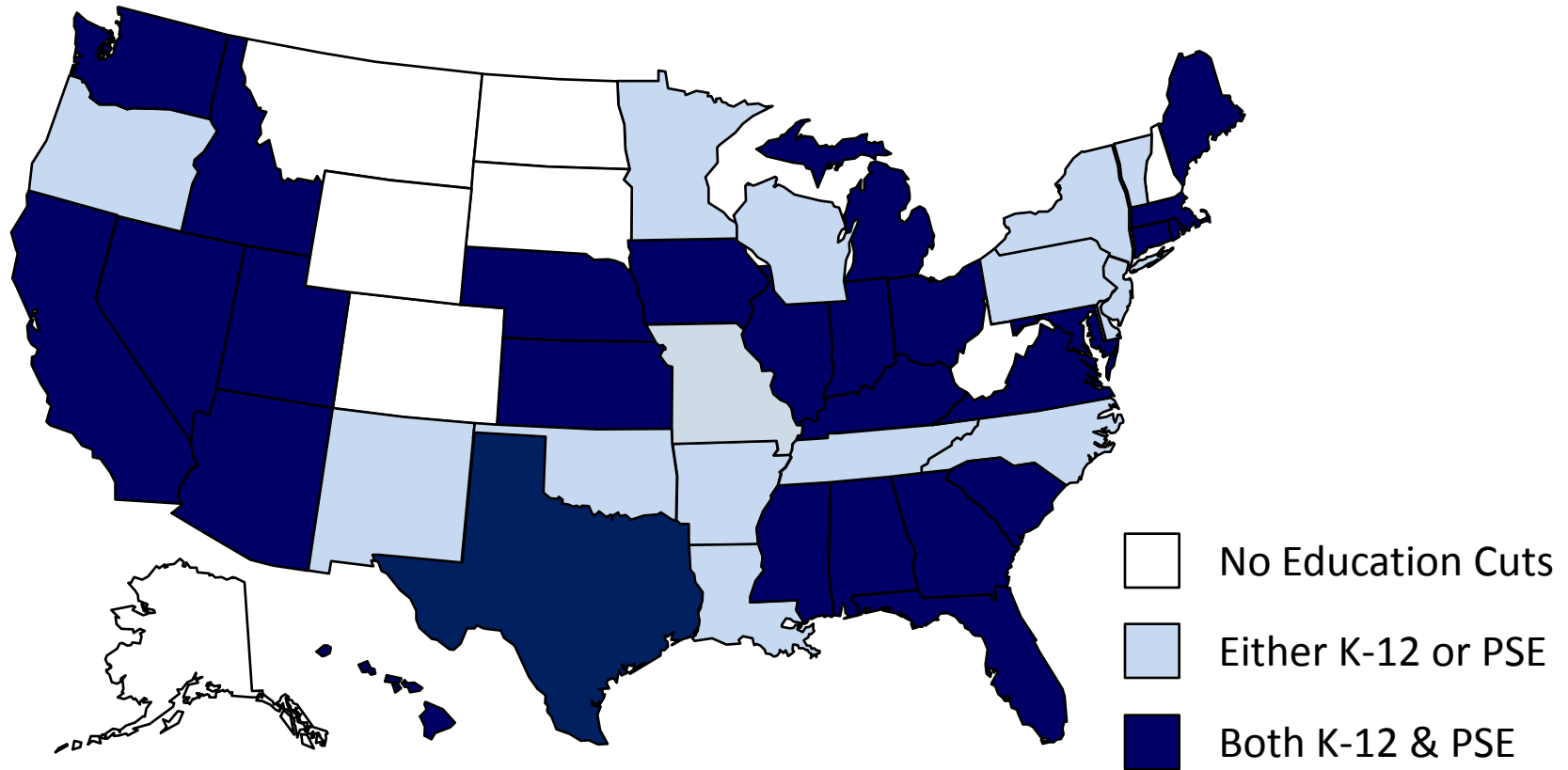


PSE Graduation Rate



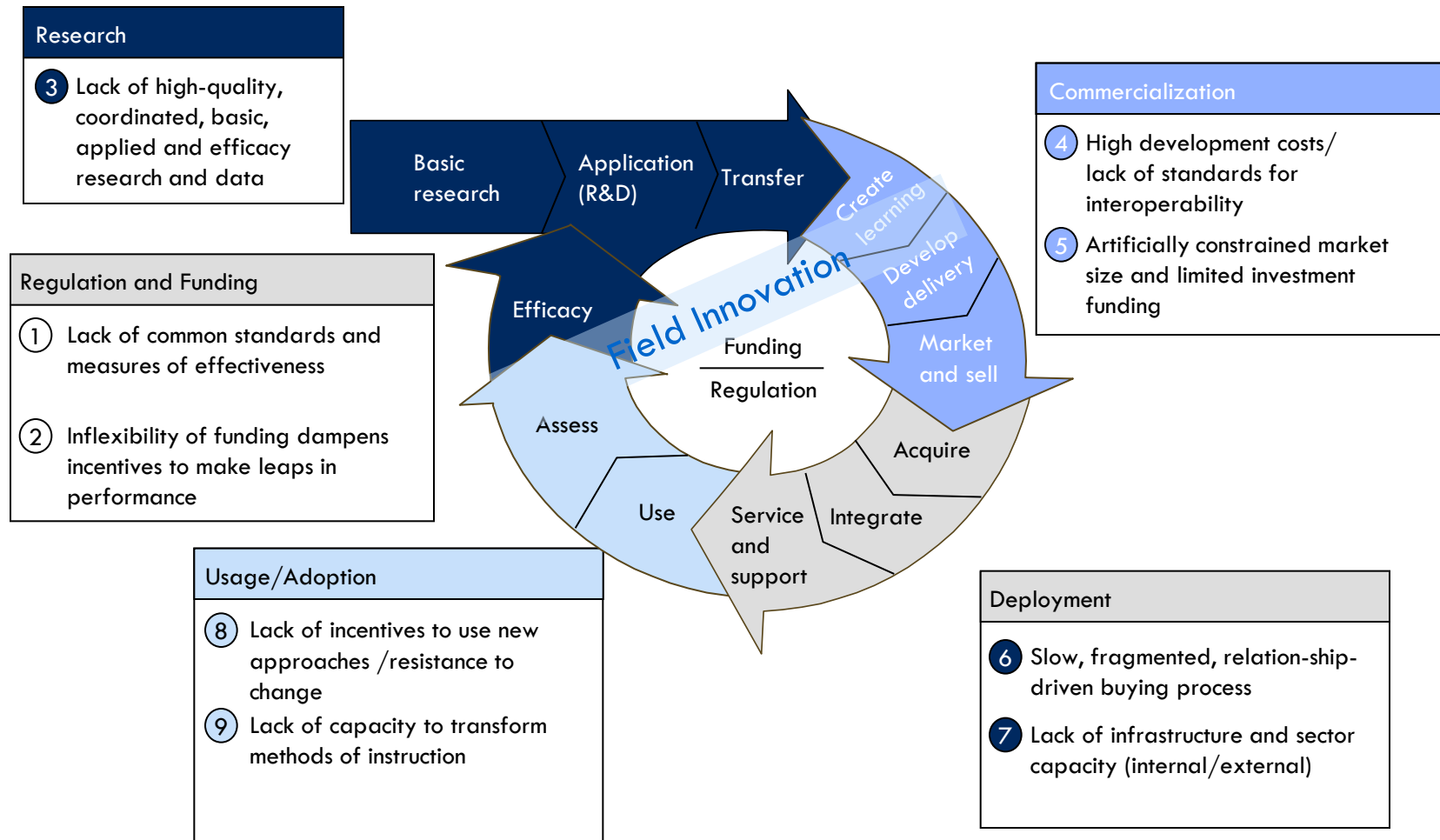
... And We Must Achieve Better Outcomes with Less Resources

State Education Budget Cuts



Source: Center on Budget and Policy Priorities

... And Many Barriers Persist to Innovation (including scale) in Education



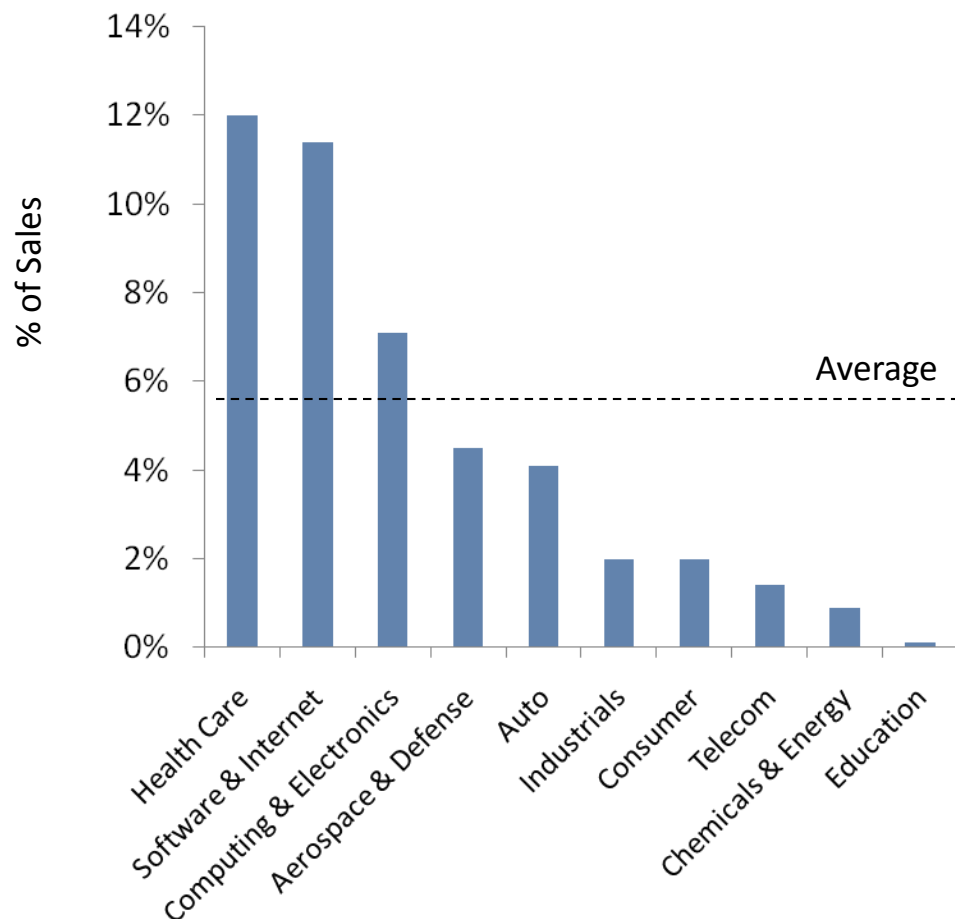
The Opportunity

To Date, Global Progress Based on “Perfecting” the 20th Century Model of School

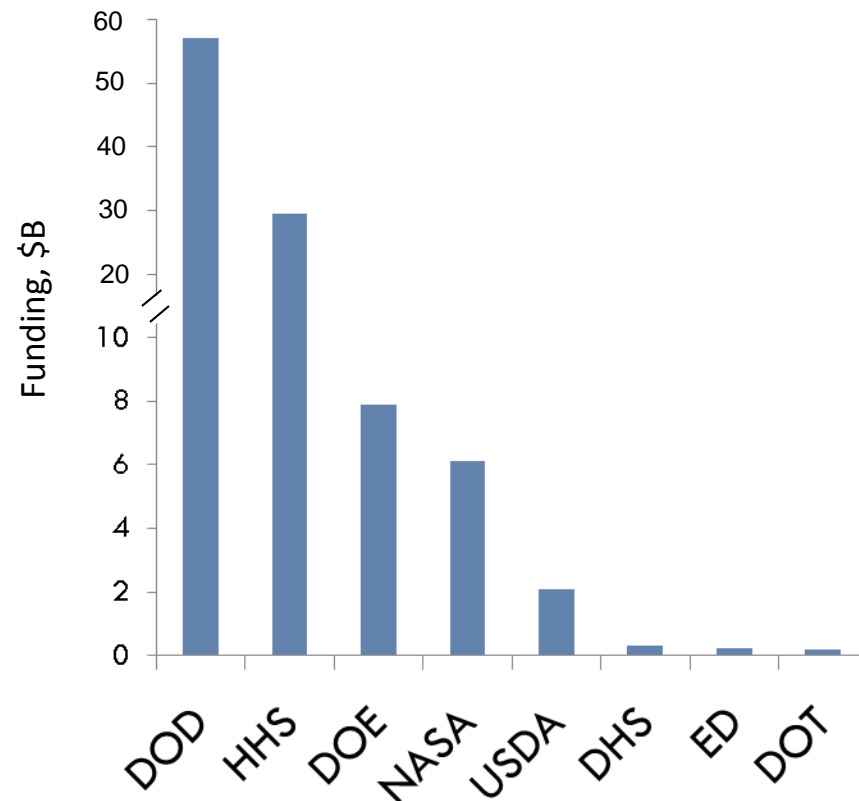
- ☐ Additional access (and time)
- ☐ Higher quality teachers
- ☐ Better standards, assessments and curriculum
- ☐ More timely and targeted data
- ☐ *Increased accountability*
- ☐ *Alternative governance and organization*
- ☐ *Choice*

We Under-invest in R&D in Education Relative to Other Sectors, Particularly Those Described as Innovative

R&D as % of Sales by Industry, 2008



R&D Funding by Agency, FY07



Note: According to NCES, expenditures for public elementary and secondary education totaled nearly \$450B in 2005-6; \$650B based on extending prior growth rate
Source: Booz & Company

Not Only a Competitive Necessity but Potentially an Incredible Economic Growth Opportunity

\$4-5 Trillion

Global Market

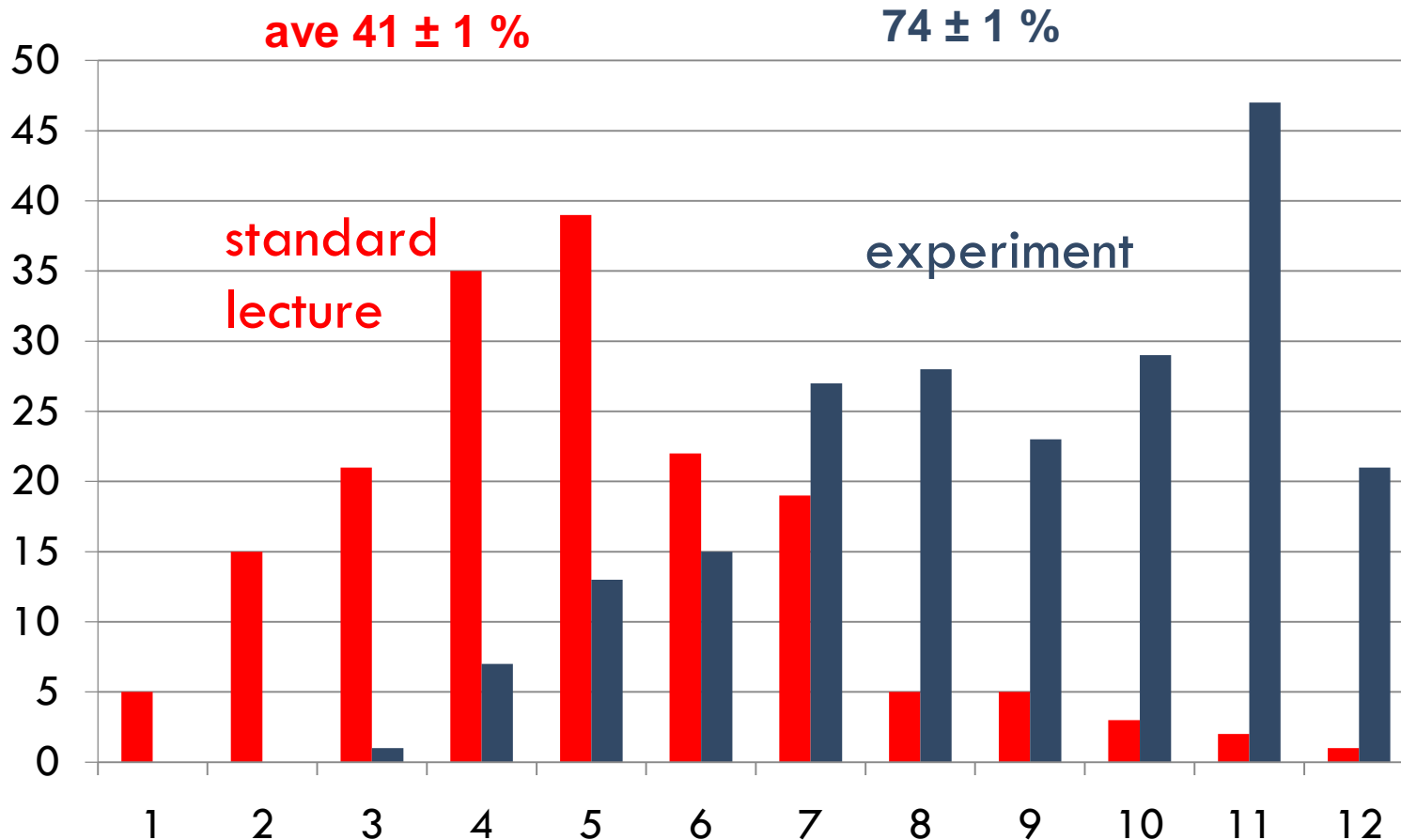
~50 Million
US K-12 Students



Note: According to NCES, expenditures for public elementary and secondary education totaled nearly \$450B in 2005-6; \$650B based on extending prior growth rate
Source: Booz & Company

It's Been Done - Experiments in College Classrooms Validate the Potential

Histogram of exam scores

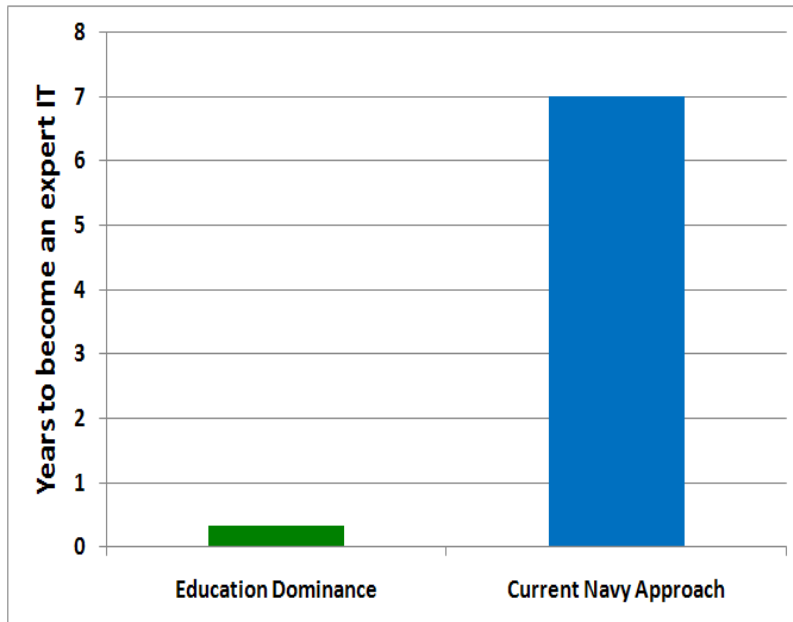


Clear improvement for entire student population. Effect size 2.5 S.D.

It's Been Done in Tougher Contexts – DARPA Project Showed 2+ SD Improvement

Objective of DARPA Project

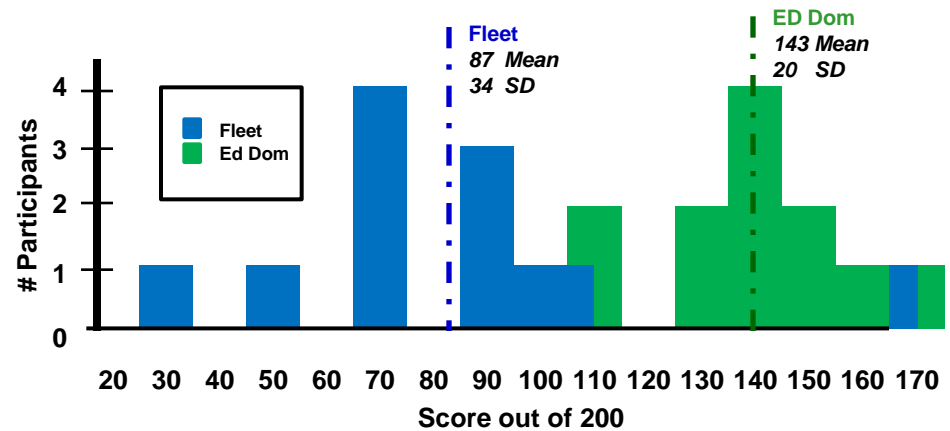
SPEEDS development of experts



Early Results of DARPA Project

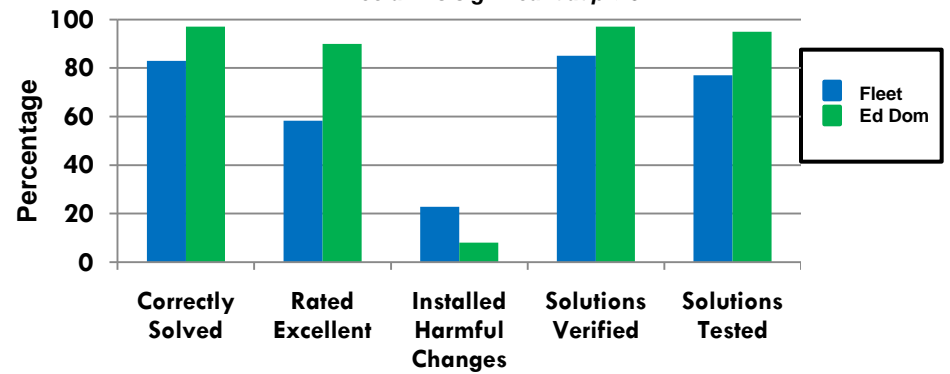
Knowledge Test

Group differences significant at $p < .01$



Performance Task

All columns significant at $p < .01$



Macro-Trends Moving in the Right Direction

- ❑ Demand for more with less
- ❑ School and home friendly infrastructure
 - ❑ Ubiquitous broadband
 - ❑ Ever-cheaper and more powerful devices
 - ❑ Cloud deployment
 - ❑ Big data
 - ❑ Pervasive technology culture
- ❑ Public investment seeding the ground

Presidential Announcement of ARPA-ED: *We Will Pursue an Aggressive Agenda of Projects*

- ❑ Digital tutors as effective as personal tutors.**
- ❑ Courses that improve the more students use them and enable every teacher to be more effective (more easily).**
- ❑ Educational software as compelling as the best videogame.**

In Summary: What are You Waiting For?

A huge adjacent market opportunity

- **With large, long-lasting product segments**
- **And significantly less complex and dynamic outcome requirements**
- **Prioritized by the government and the private sector**
- **Enabling the nation's economic, diplomatic and developmental aspirations.**